RESTRICTED CIRCULATION

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Agricultural Memorandum No 845

Wind Exposure Survey at Bradfield Farm, Reading

As a contribution to a study of lamb mortality, daily run-of-wind data were gathered over two seasons at 2m height at 13 sites at Bradfield Farm. The farm was situated on a south facing, undulating slope leading down to the River Pang (Fig 1).

Wind directions were inferred from anemographic data from Benson (20 km to the north) and the basic features of the wind regime as a function of direction were mapped (table 1, figs 1 to 4).

Interesting features of the wind régime are:-

1. Owl pit: Fairly exposed 180° sector to the south; shelter afforded by trees to the east.

2. Annis field: Channelling of westerly winds into the hollow at K; comparatively well-sheltered nature of both Bayleys (at 75m) and Annis Cross (above 105m).

3. Rushall field: Over-exposed nature of M, N and P to winds from the south-west quadrant (200% of reference site at H); channelling of southerly winds up the hollow near R; protection afforded to all sites from the east by trees and by ground slope.

Such "exposure" data can aid the farmer in assessing the allocation of weakling stock to pastures, the siting of feed areas and the need for shelter belts.

Any comments or suggestions on this paper should be referred to the author.

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October 1978

LEGEND

Table 1

Run-of-wind at Bradfield sites as a function of wind direction, expressed as a percentage of those at the reference site in Annis Field.

Figures

1. Map of Bradfield Farm showing anemometer sites. Height contours (60, 75, 90 and 105) in metres. Hollow near R is shaded. Wooded areas shown by "trees".

2, 3 and 4. Enlarged maps, roughly to scale, of individual fields with "wind-roses" at each anemometer site. Each arm is centred on a quadrant (North to North East etc) and its length represents wind as a percentage of that at H (100% ≡ 2 cm).

MR

TABLE 1

	OWL PIT		BAYLEYS	ANNIS FIELD				RUSHALL					ANNIS CROSS
Direction	A	E	G	H	J	K	L	M	N	P	Q	R	S
N - NE	76	76	68	100	-	49	89	73	69	82	82	72	61
NE - E	86	83	70	100	-	53	89	74	-	91	-	80	66
E - SE	114	114	69	100	71	35	59	89	83	104	64	74	55
SE - S	121	116	120	100	68	49	61	178	160	127	90	124	75
S - SW	111	149	113	100	83	70	52	206	164	151	72	113	100
SW - W	100	170	95	100	86	91	55	175	142	147	79	93	65
W - NW	73	120	61	100	-	104	71	108	81	97	50	58	-
NW - N	72	82	58	100	-	49	87	103	83	91	60	71	-

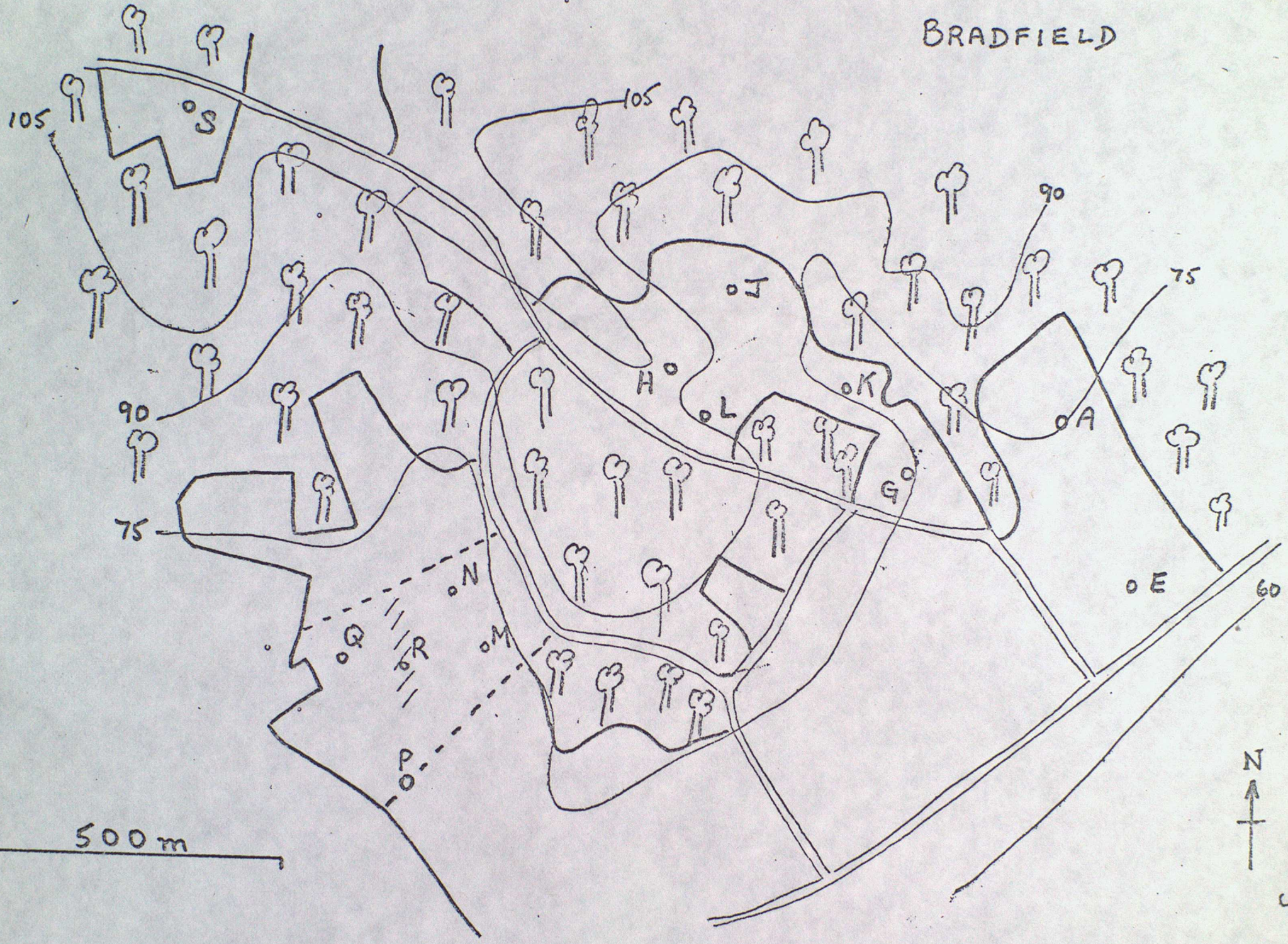
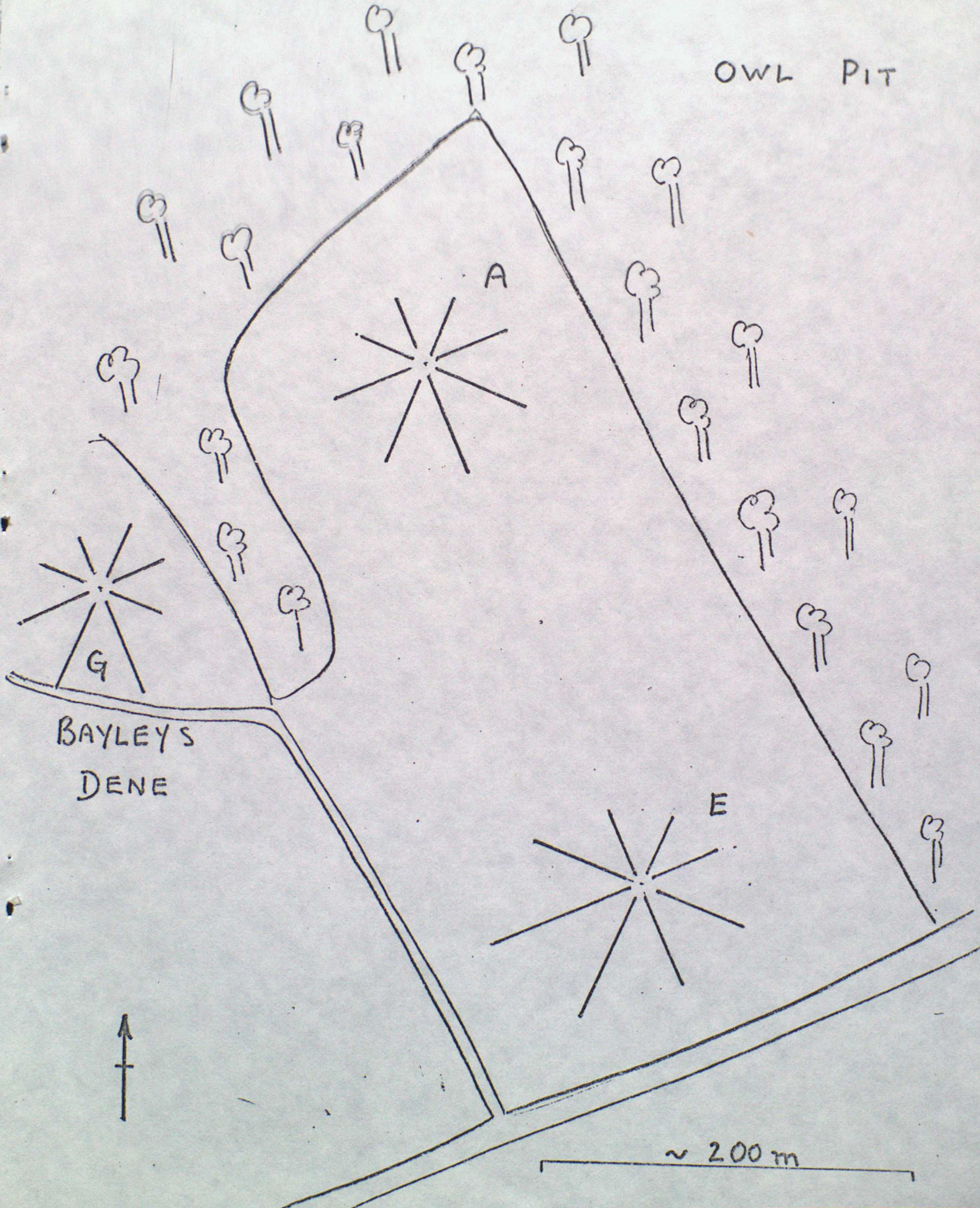


Fig 1

FIGURE 2



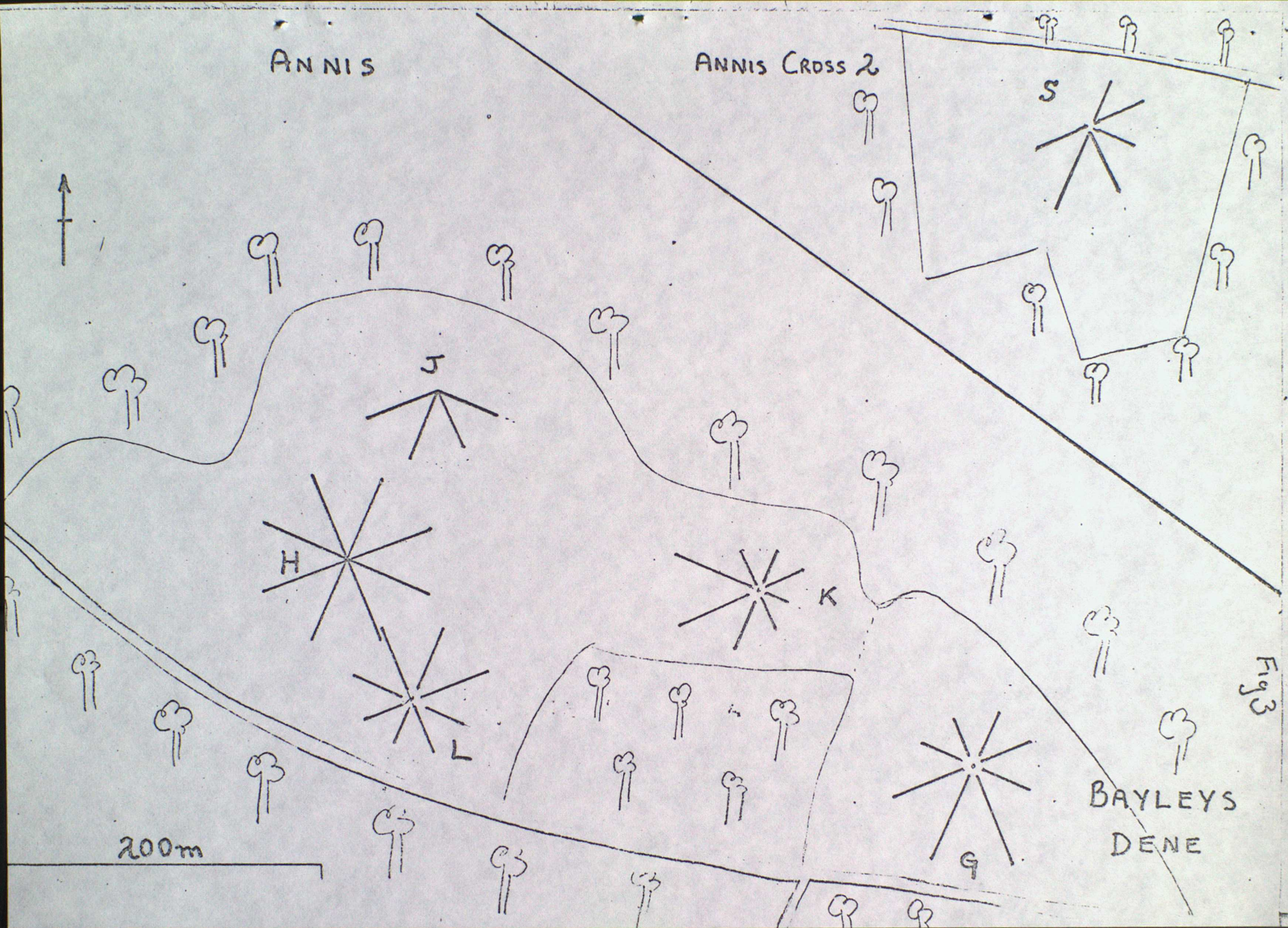


Fig 3

RUSHALL

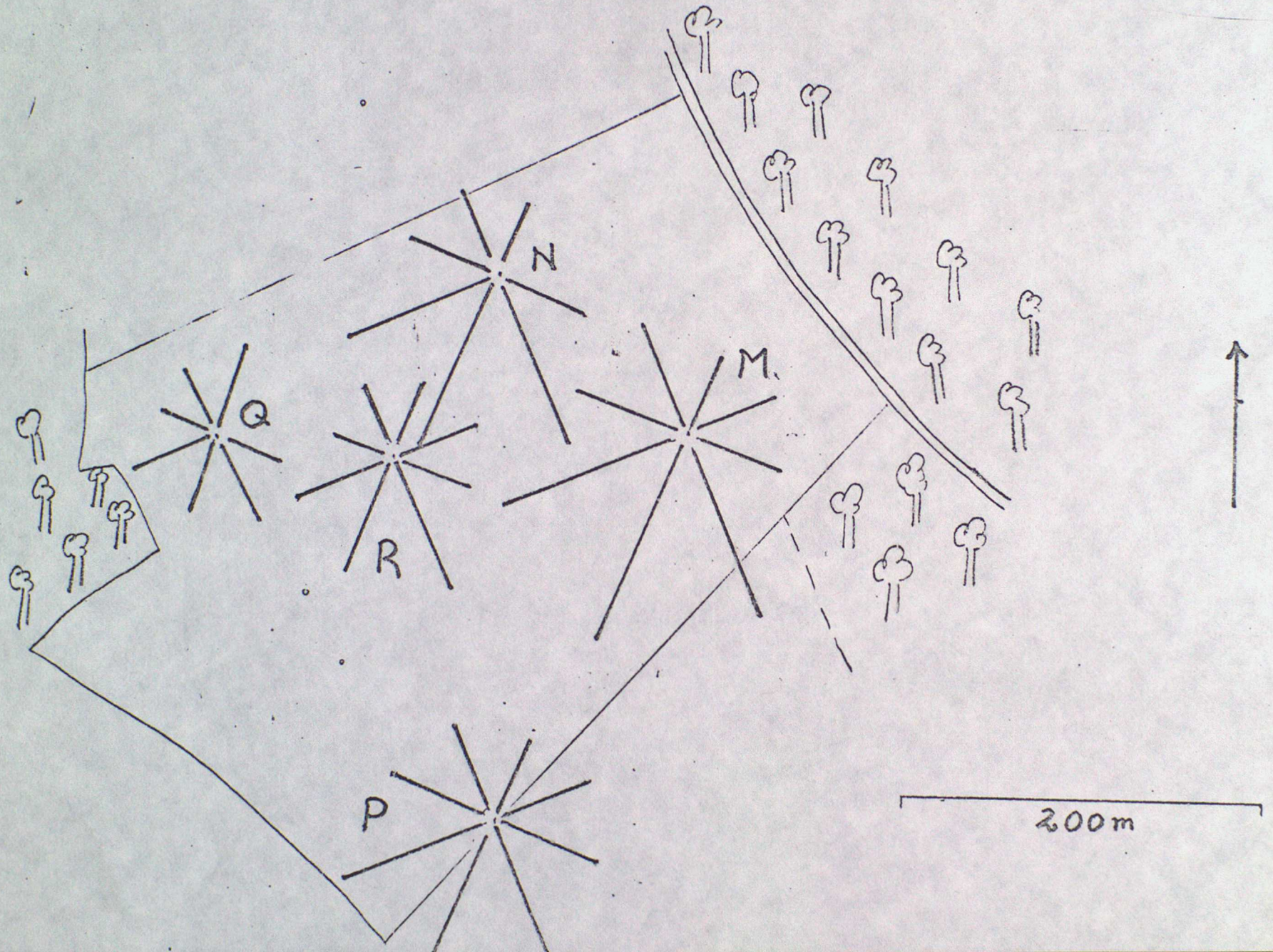


Fig 4